



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,851	01/26/2004	Keiichi Kobata	36394	9784

116 7590 11/09/2006

PEARNE & GORDON LLP  
1801 EAST 9TH STREET  
SUITE 1200  
CLEVELAND, OH 44114-3108

EXAMINER

LE, LANA N

ART UNIT	PAPER NUMBER
----------	--------------

2618

DATE MAILED: 11/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/764,851	<b>Applicant(s)</b> KOBATA ET AL.	
	<b>Examiner</b> Lana N. Le	<b>Art Unit</b> 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 4 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oei et al (US 6,614,024) in view of Chung (US 7,039,326).

Regarding claim 1, Oei et al disclose a wireless headphone apparatus (fig. 2), comprising:

a plurality of light signal receiving units (22) each for receiving a light signal to produce an electric signal having a signal level (infrar-red signals; col 4, lines 1-30); and speaker means (speaker within headset) for outputting a sound in response to a synthesized electric signal (col 2, lines 59-64).

Oei et al do not disclose a plurality of light signal limiting units respectively connected with the plurality of light signal receiving units in one to one relationship, each of the light signal limiting units operative to allow only an electric signal having a signal level lower than a predetermined threshold value to pass therethrough and delete an electric signal having a signal level equal to or greater than the predetermined threshold value. Chung discloses a plurality of light signal limiting units (509, 515; fig. 5) respectively connected with the plurality of light signal receiving units (501, 503) in one to one

Art Unit: 2618

relationship, each of the light signal limiting units operative to allow only an electric signal having a signal level lower than a predetermined threshold value to pass therethrough and delete an electric signal (by setting the signal to zero in the switching gates 509, 515) having a signal level equal to or greater than the predetermined threshold value (predetermined criteria wherein the predetermined criteria can be a signal power threshold to detect noise; col 2, lines 16-24; col 1, lines 65-67; col 6, lines 49-64); a signal synthesizing unit (513) for synthesizing the electric signals passed the light signal limiting units (509, 515) to produce a synthesized electric signal (col 6, lines 62-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to limit the light signals in order to remove noise and interference as suggested by Chung (col 6, lines 60-62).

Regarding claim 2, Oei et al and Chung disclose the wireless headphone apparatus as set forth in claim 1, in which Oei et al disclose the light signal receiving units are constituted by at least two light signal receiving units (two units 22; see fig. 2).

Regarding claim 3, Oei et al and Chung disclose wireless headphone apparatus as set forth in claim 1, in which Oei et al disclose the speaker means is constituted by at a right speaker and a left speaker (inherent speakers of headset; fig. 1b) (col 2, lines 59-64; col 3, lines 59-67).

Regarding claim 4, Oei et al and Chung disclose the wireless headphone apparatus as set forth in claim 1, in which the light signal receiving units (receivers containing photo diodes 22; fig. 2) are placed in the vicinity of the right speaker and the left speaker (inherent speakers of headset; fig. 1b) (col 2, lines 59-64; col 3, lines 59-

67).

Regarding claim 6, Oei et al and Chung disclose the wireless headphone apparatus as set forth in claim 1, in which the speaker means is further constituted by a right speaker, a left speaker, and a housing having a first axis passing through the right speaker and the left speaker, and a second axis substantially perpendicular to the first axis and passing through a middle point of the first axis in equidistantly spaced relationship with the right speaker and the left speaker, the light signal receiving units are opposing to each other across a plane passing through the first axis and the second axis.

Regarding claim 7, Oei et al and Chung disclose a wireless headphone system, comprising: a light signal emitting apparatus (external light emitting unit not shown) for emitting a light signal (24, 26; fig. 2); and a wireless headphone apparatus (figs. 1b, 2) as set forth in any one of claim 1 to 6 (headset; fig. 1b) (col 2, lines 59-64; col 3, lines 59-67), and in which each of the plurality of light signal receiving units (22) of the wireless headphone apparatus is operative to receive the light signal emitted by the light signal emitting apparatus.

3. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oei et al (US 6,614,024) in view of Chung (US 7,039,326) and further in view of Yamanaka et al (US 6,871,986).

Regarding claim 8, Oei et al and Chung a wireless headphone system as set forth in claim 7, in which Oei et al and Chung do not disclose the light signal emitting apparatus is provided in a vehicle, and each of the light signal receiving units of the

Art Unit: 2618

wireless headphone apparatus is operative to receive the light signal emitted by the light signal emitting apparatus in the vehicle. Yamanaka et al disclose the light signal emitting apparatus (7) is provided in a vehicle (1), and each of the light signal receiving units (12) is operative to receive the light signal emitted by the light signal emitting apparatus in the vehicle (col 3, lines 43-54). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the system of Oei et al and Chung have a light emitting unit inside a vehicle to allow the user to see the interior of the vehicle by fluorescent illumination.

Regarding claim 9, Oei et al, Chung, and Yamanaka et al disclose a wireless headphone system as set forth in claim 8, wherein Yamanaka et al disclose the light signal emitting apparatus is provided on a ceiling of the vehicle (headset; fig. 1b) (col 2, lines 59-64; col 3, lines 59-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to install the light on the ceiling of a vehicle in order to provide an overall light source for the interior of the vehicle.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oei et al (US 6,614,024) in view of Chung (US 7,039,326) and further in view of Abe (US 5,095,382).

Regarding claim 5, Oei et al and Chung disclose the wireless headphone apparatus as set forth in claim 1, wherein Oei et al disclose the speaker means is further constituted by an inherent right speaker, a left speaker, and a housing having a first axis passing through the right speaker and the left speaker within earphones (headset; fig. 1b) (col 2, lines 59-64; col 3, lines 59-67). Oei et al and Chung do not disclose at least one of the light signal receiving units is placed on a second axis

Art Unit: 2618

substantially perpendicular to the first axis and passing through a middle point of the first axis in equidistantly spaced relationship with the right speaker and the left speaker. Abe discloses at least one (16) of the light signal receiving units (16, 17, 18) is placed on a second axis (axis along center 24a) substantially perpendicular to the first axis (horizontal axis of earphones) and passing through a middle point of the first axis in equidistantly spaced relationship with the right speaker and the left speaker (see fig. 1) (col 4, lines 22-41). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the light receiving unit be placed on a second axis perpendicular to the speaker in order to reduce interference to the audio signals.

### ***Response to Arguments***

6. Applicant's arguments filed 8/21/06 have been fully considered but they are not persuasive. First, applicant's remarks admitted that the main reference, Oei et al, the sensor could be used in a wireless headphone. Since the sensor is applicable for use in wireless headphones. Therefore, the sensor can be used as a component which a wireless headphone comprises. Second, applicant argues that the predetermined criteria in the cited secondary reference, Chung, does not disclose deleting the electric signal having a signal level equal to or greater than the predetermined threshold value. However, to clarify the predetermined criteria, Chung discloses filtering the electrical noise signals based on a predetermined frequency or power threshold (col 1, lines 65-67; col 2, lines 13-26). Therefore, the predetermined criteria does not have to be only a frequency threshold but a signal power threshold to measure the signal level as

Art Unit: 2618

suggested by Chung. As a result, the rejection filed 5/18/06 stand rejected as set forth in the previous office action.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lana N. Le whose telephone number is (571) 272-7891. The examiner can normally be reached on M-F 9:30-18:30.

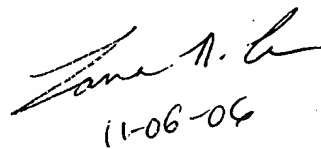
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2618

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lana Le



11-06-06

LANA LE  
PRIMARY EXAMINER